

-16-

Claims

What is claimed is:

1. A data storage device in a form factor assembly not greater than three and one half inches comprising:

a data disc rotatably mounted on a baseplate;
an actuator arm adjacent to the data disc carrying a transducer for reading data from and writing data to the data disc;
a printed circuit board (PCB) fastened to the baseplate having a servo controller in operable communication with the actuator arm for moving the actuator arm over the data disc;
a central processing unit (CPU) connected to the PCB generating control signals to the servo controller and running an operating system; and
memory storing an application program operably connected to the CPU, whereby the application program is run by the CPU.

2. The data storage device of claim 1 wherein the data storage device is connected to a communications network, further comprising:

an input/output module communicating to a node connected to the communications network.

3. The data storage device of claim 2 wherein the input/output module includes a network interface module operable to communicate to a node on the network using a hypertext transport protocol.

4. The data storage device of claim 3 wherein the input/output module further includes a video interface module operable to drive a video monitor via the communications network.

5. The data storage device of claim 4 wherein the data storage device is a three and one half inch form factor assembly.

-17-

6. The data storage device of claim 5 further comprising a file system managing file data stored on the data disc, wherein the file system is in direct communication with the servo controller.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

-18-

7. A computer system comprising:

a docking station having a connector port for receiving a data storage device; and

a data storage device having a microprocessor, a memory storing an operating system operably connected to the microprocessor operable to execute application programs, whereby the microprocessor executes the operating system, an input/output module operably connected to a communications network, and a data storage disc, the data storage device connected to the connector port.

8. The computer system of claim 7 wherein the docking station includes a connection to a communications network.

9. The computer system of claim 7 wherein the input/output module operably communicates with a node on the communications network using a hypertext transport protocol.

-19-

10. A method of distributing computer processing tasks comprising steps of:
connecting a plurality of intelligent storage elements to a communications bus, wherein
each intelligent storage element comprises a microprocessor, a connector port, an input/output
module, a data disc, and a servo controller for reading from and writing to the data disc;
5 assigning tasks to each of the plurality of intelligent storage elements; and
distributing data among the plurality of intelligent storage elements based on the
assigning of tasks.

11. The method of claim 10 further comprising steps of:
10 determining if a primary master intelligent storage element has crashed; and
switching to a secondary master intelligent storage element if the primary master
intelligent storage element has crashed.

12. The method of claim 11 wherein the assigning step comprises steps of:
15 selecting a first application program;
assigning the first application program to a first intelligent storage element;
selecting a second application program; and
assigning the second application program to a second intelligent storage element.

-20-

13. A data storage device in a form factor assembly not greater than three and one half inches comprising:

- a microprocessor executing application programs;
- a data disc;

5 an actuator assembly rotatably mounted adjacent the data disc for positioning transducer heads relative to the data disc;

- a servo control module controlling the actuator assembly;
- a memory containing the operating system and operably connected to the microprocessor, whereby the microprocessor runs the operating system; and
- 10 a communication means operably connected to the microprocessor and the memory for communicating data stored on the data storage device to a node on a communications bus.

14. The data storage device of claim 13 wherein the data storage device is connected to a communications network, further comprising:

- 15 an input/output module operable to receive data from a node on the communications network.

15. The data storage device of claim 14 wherein the input/output module operably communicates with a node on the communications network using a hypertext transport protocol.